1; Drew G-3 (1862-1872) 1875 AVI Kashmir AVI

plain. The city of Jummoo is on the outermost range where the Tavi passes out through it; the town of Jasrota is in a corresponding situation on the banks of the Ujh River.

Both of these rivers are very liable to floods; these occur both in the time of the periodical rains of summer and in the season of the more irregular winter rains; the floods come down with great force, and for a time render the rivers impassable either by fording or by ferry; they can then only be crossed on inflated skins, and so the traffic of the road is stopped for some hours at a time. It is these floods that carry stones of considerable size, a foot or two across, down the bed for several miles, beyond the outskirts of the hills; the Ujh especially, which has a steeper bed and is liable to quicker floods than the other, brings down boulders of large size; even at a distance of four miles from the hills they are to be found from 2 to 3 feet in diameter. From both the Ujh and the Tavi small irrigation canals are led, so that in certain restricted spaces the cultivation is of a more productive character.

The Chināb, which is a great river of large volume, debouches into the plain country by the town of Akhnūr. Down to that spot the stream of it is so broken by rapids as to be unnavigable, but from Akhnūr, where its level is 1100 feet, down to the sea, boats can traverse it. At Akhnūr the Chināb divides into various channels, which fertilize the tract called Bijwāt, another of those places to which irrigation gives exceptional fertility. Part of this watered tract belongs to the Maharaja and part to the British Government.

Leaving the river and examining the country on the west of it, we find that generally to correspond with what we saw in the eastern part between the Rāvi stream and this Chināb river.

All along to Bhimbar, past the villages of Mināwar and Barnāli, lies the strip of drier plain. It is a plain with slight depressions, which occur where one crosses the sandy or stony stream-beds. Most of these stream-beds are quite dry for the greater part of the year, but there is one that holds a continuously-flowing river. This stream is the Mināwar Tavi, so called to distinguish it from its sister of Jummoo; rising a good way back among the mountains, from the Ratan Range behind Rājaorī, it finds its way

1; Drew- G-3 (1862-1872) 1875 AV1 Kashmir AV1

before one comes to the Middle Mountains; it is on the upper plain of that dūn, about 2400 feet above the sea. As a town it was founded by Mīān Udam Singh, the eldest son of Maharaja Gulāb Singh, who would, had he lived, have made it an important place; as it is, there is a good large bazaar, and the present Maharaja has begun building a new palace there, and has entered on the construction of a canal to bring water from the Tavi River on to the plateau, for household and garden purposes and for general irrigation. 361 175 [312]

The next town is *Kiramchi*, only 4 miles away. This and the tract of country near round it used to be under a Raja or a Mīān of the Pathiāl tribe of Rājpūts, who was tributary to Jummoo, paying to it yearly 2000 rupees and giving the services of some 10 horsemen. About the year 1834 Gulāb Singh, having made up his mind to possess the place, refused the tribute and sent a force to besiege the fort; after some time they took it, and the country was annexed. What now remains of the fort is a well-built wall of sandstone and a dry tank; it is on a rocky mound in a commanding position behind the town. 361 175 642

Within a couple of marches from Jummoo, to the eastward, are three or four places worth seeing. One of these is *Babor*, in the Dansāl dūn, near the left bank of the Tavi; there are the ruins of three old Hindū temples, of what age I know not; the buildings were of great solidity and considerable beauty; the chief feature of one of them was a hall whose roof was held up by eight fluted columns supporting beams of stone 10 feet in length; on these beams were laid flatter stones chequerwise, so as to fill up the corners of the square as far as the centre of the beams, and so make a new square cornerways to the other; on this was laid another set of stones cornerwise to this, and so on till the whole space was covered; this square mass of stone was ornamented with carving. The material of these buildings is a slightly calcareous sandstone which is found among the strata near; it has well stood against weathering, and its toughness may be known from one of the beams of it used in the construction being as much as 14 feet in length. No mortar was used in the 361 346 341

1: Drew G-3 (1862-1872) 1875 AV1 Kashmir AV1

nought but the sandy stream-bed between them; there was the chief temple with a fine façade, and, behind that, numerous domes, one gilt one conspicuous; most of the others are houses built by the courtiers of Ranjît Singh, who was attached to this place and occasionally visited it; they are now inhabited by Brahmans. 361 783 788

The whole place was alive with people who had come to bathe and to worship; booths and stalls, as for a fair, had been put up in the middle of the sandy space; the picturesque buildings, backed close by sandstone rocks, and the crowds of cheerful pilgrims, made a gay and pretty scene. It is only for a short time after rain that a stream flows over the sands, now they had to dig two or three feet to reach the water; numbers of holes had thus been made, and the people scooped up enough water to bathe themselves with; the atoning power of such a ceremony is considered in these hills to be second only to that of a visit to Haridwâr on the Ganges. [312]

A journey of not many miles from Parmandal, but by a rugged path over difficult hills, would bring us to the two strange little lakes named *Saroîn Sar* and *Mân Sar*, the latter word of each name being the one used for "lake." They are 8 or 10 miles apart, but are on about the same strata, and are each about 2000 or 2200 feet above the sea, being situated somewhat high on or between the parallel ridges. 133×

Saroîn Sar may be said to cover a kind of platform, from which on two sides the ground falls rather steeply, while on the other sides are low hills; the lake is about half a mile long and a quarter of a mile broad, a pretty spot; mango trees and palms adorn its banks, and cover thickly a little island in the centre; while the sandstone hills round are partly clothed with brushwood, and shaded, though lightly, with the bright loose foliage of the long-leafed pine.

Mân Sar is a larger lake, perhaps three-quarters of a mile long and half a mile broad; it is in a very similar position, at a high level, and nearly surrounded by hills, but at one side there is a great descent into a steep valley or ravine.

1; Drew G-3 (1862-1872) 1875 AV1 Kashmir AV1

Outer Hills. These were shown to be ridges more or less parallel, separated by flat valleys, sometimes narrow sometimes wide, with the main lines of drainage cutting across, that is, through, the ridges. On the other hand, the Middle Mountains are ridges of varying, irregular, direction, that branch again and again, like the twigs of a tree; the chief ridges are at the same time the more important watersheds.

Looking from a geological point of view, we may say that there is not the same correspondence between the direction of the ridges and the strike of the beds as there is among the Outer Hills.*

The elevation of these Middle Mountains is sufficient to give a completely temperate character to the vegetation. Forests of Himalayan oak, of pine, spruce, silver fir, and of deodar, occupy a great part of the mountain slopes; the rest, the more sunny parts, where forest trees do not flourish, is, except where rocks jut out, well covered with herbage, with plants and flowers that resemble those of Central or Southern Europe.

Cultivation has been carried to almost every place where it is practicable. Wherever, within the altitude that limits the growth of crops, the slope of the ground has allowed of it, the land has been terraced, and narrow little fields have been made, these settlements sometimes being of extent enough to support a village, sometimes sustaining but one or two families.

Here, as in the Outer Hills, the tillage does not depend on irrigation, but on rain; these mountains, indeed, get the best of the Monsoon or rainy season; it is seldom that they suffer from drought, more often they suffer from an excess of downfall. Still the rainfall is not enough for the growth of rice; for this irrigation is wanted, but only in a few places can it be obtained; hence that crop is comparatively rare.

It is only in the very lowest parts of this region that two crops can be got from the same land. The times of growth of the two kinds of crop—of wheat or barley on the one hand, and of maize, rice, or millet, on the other—in most parts overlap each other to

* This contrast is noted, with regard to a similar tract farther east, by Mr. H. B. Medlicott, in 'Memoirs of the Geological Survey of India,' vol. ii., part 2, p. 6.

2: Gervis T-3 (no date) 1954 AV1 Kashmir AV1

man who has retired from active work, his charge for grinding being a percentage of the flour. 000

Here again in this country are to be seen the fair complexions, the blue and the hazel eyes, the brown or gold-tinted hair. The men are in the main handsome, they are not as hard-looking as those of Gilgit: among the youths especially there is a blending with the rather effeminate young men of the Valley, but they are essentially men, their stride is long. They are taller than the others of the State, though not powerfully built, and it is seldom that one sees a fat Poonchi Muslim. Generally their faces are long, the complexion light brown, the nose large, aquiline and well shaped; quite frequently the black hair is wavy. In all they are a good-looking race, and this applies to both men and women, who even in their old age retain their good looks, the men then growing beards, and the eyebrows seeming to extend forward. What is more noticeable is that unlike the peasants and farmers of the Kashmir Valley and Ladakh, they are not filthy dirty; you can with safety get close to them and enter their houses. 142 515

Those who have known the man of Poonch as a soldier or as a servant—and large numbers migrated to India to work as such under British officers and residents—will agree that their foremost quality is reliability and faithfulness; as servants, if they like you, they will remain all their lives, if not, they will leave you at once, for theirs is a distinct line drawn between those they like and dislike. The women are not as bold as the women of the Valley; they also go unveiled; their beauty is of a different quality from those sisters over the mountains, who have a Jewish appearance. Although mostly Muslim, they do not scamper off round the corner of the house like the women of Baltistan when they see a stranger about, neither do they stand and stare at him as do those of Ladakh; they just continue with their work as though unaware of his presence, while the children run out to look at him, standing at a distance. Unlike the men of Gilgit who scowl, the man of Poonch will usually greet one with a friendly grin if not a smile. 181 562 609 609

From the smooth surface of the hard giant boulders in the Poonch Valley, it is believed that at one time a glacier moved where the river now runs, yet strangely enough on the right of 133 312

2: Gervis T-S (no date) 1954 AV1 Kashmir AV1

that river bank, at Tattapani to be exact, hot sulphur springs with valuable medicinal properties are found.

According to the 1941 census, about nine-tenths of the population were of the Muslim faith. The Raja who was a Hindu, was subject to the Maharaja of Kashmir. The unwalled, oblong-shaped capital of the State is also called Poonch—in some books it is still spelt Punch, but the pronunciation is Poonch. The population is under ten thousand. The valley in which this city has been built opens up as one approaches it and is rather like a miniature Valley of Kashmir. The view is clear for miles ahead, with Poonch built on a low plateau overlooking the river which flows quietly, parallel with the hill ridges. The old fort-palace with its massive walls, seems to rise from among the hundreds of houses in the bazaar of narrow, stone-paved streets. The Raja's white-walled and red-roofed new palace is built behind them all and dominates the whole, with a background of green hills and far-distant snow peaks behind which sits Gulmarg.

The Muslim schoolboys of Poonch always remember two landmarks in the history of their city. The first is 1814, when Ranjit Singh made his attack on Kashmir through Poonch; he sought the co-operation of Ullah Khan, the then Raja of Poonch, but this ruler being a Muslim had Afghan sympathies, and gave an evasive reply to the request, pleading his inability to comply with the Maharaja's wishes since his son was then a hostage in the hands of the Duranis. Ranjit Singh's forces advanced with the Maharaja at their head; the small forces of Poonch fell back, the Raja ordering his subjects to leave the town and villages, thus cutting off supplies from the Sikhs, who however, reached Tosa Maidan in their advance. There they suffered a crushing defeat at the hands of the Afghan forces of Rajouri and Poonch. Retreating, the Sikh army burnt the fair city of Poonch to the ground.

Later, when Poonch was still an independent hill State, it was annexed by the Maharaja Gulab Singh, when he defeated the combined forces of the Afghan Governor of Kashmir and the Raja of Poonch. Then, in order to show the people of his new State that the last of the representatives of the main line of rulers would never be able to return, he had both of them

133 languages, and religions, and countries of widely different physical characteristics, under the rule of the Mahárájá.

Mountain and river systems.

The Kashmír territory may be divided physically into two areas: the north-eastern, comprising the area drained by the Indus with its tributaries; and the south-western, including the country drained by the Jhelum with its tributary the Kishanganga, and by the Chenáb. The dividing line or watershed is formed by the great central mountain range which runs from Nanga Parbat, overhanging the Indus on the north-west, in a south-easterly direction for about 240 miles till it enters British territory in Láhul.

South-western area.

The south-western area may, following the nomenclature of Mr. Drew, in its turn be geographically divided into three sections: the region of the outer hills, the middle mountains, and the Kashmír Valley.

Outer hills.

Approaching Kashmír from the plains of the Punjab, the boundary is not at the foot of the hills, but embraces a strip of the great plains from 5 to 15 miles wide, reaching from the Rávi to the Jhelum. As is generally the case along the foot of the Western Himálayas, this tract of flat country is somewhat arid and considerably cut up by ravines which carry off the flood-water of the monsoon. A fair amount of cultivation is found on the plateaux between these ravines, though, being entirely dependent on the rainfall, the yield is somewhat precarious. The height of this tract may be taken at from 1,100 to 1,200 feet above sea-level.

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Passing over the plain a region of broken ground and low hills is reached, running mainly in ridges parallel to the general line of the Himálayan chain. These vary in height from 2,000 to 4,000 feet, and are largely composed of sandstone, being in fact a continuation of the Siwálik geological formation. Lying between these parallel ridges are a series of valleys or *dúns*, fairly well populated, in the east by Dográs, and in the west by Chibs. These hills are sparsely covered with low scrub bushes, the *chír* (*Pinus longifolia*) gradually predominating as the inner hills are reached. Beyond these lower hills rise the spurs of a more mountainous district.

The middle mountains.

The scope of this region, as defined by Mr. Drew, has been somewhat extended, and includes the range which forms the southern boundary of the Kashmír Valley, known as the Panjál range, and its continuation eastwards beyond the Chenáb. This tract is about 180 miles long and varies in width from 25 to 35 miles. The portion lying between the Jhelum and Chenáb is formed by the mass of mountainous spurs running

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311
[134]
[241]

roaring torrents for a few hours after heavy rainfall, but at other times are broad stretches of burning sand. This tract depends for a full crop on timely and well-distributed rainfall.

The parched *Aundi* hills are composed of a red loam, thickly strewn with round stones and covered with stunted growth of *garna zanzira* and *Aukaikar* bushes, broad-leaved species of trees, acacias, and in parts bamboos. The *ser* (*Euphorbia*) is used to hedge the fields and cobble-paved paths, and to keep the *nilgai* from damaging the crops. The soil is thirsty and dries quickly, as the land slopes and drainage is rapid. Frequent rainfall is necessary to ripen the crops, chiefly wheat, barley, and *sarshaf* (rape) in the spring, and millet and maize (on manured land) in the autumn; but rain washes away the soft earth and leaves the surface of the soil a mass of stones.

Where the *Aundi* hills end, and before the first limestone ridge is crossed, there is a narrow belt of cool land lying in the valleys traversed by the clear streams which carry the drainage of the middle hills on the lower side. When the depth of soil is sufficient, excellent crops are raised and much of the land is irrigated; but on the slopes where the depth of earth is small, and the limestone crops up to the surface (*pudi*), cultivation is precarious. Too much rain causes the soil to become water-logged, as percolation is stopped by the rock bed; and during a continued spell of hot weather the rock surface becomes so heated as to burn the roots of the crops, which wither.

Irrigation.

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In this portion of the province wells are few, owing to their cost. Except in the lowland bordering on the streams deep boring is necessary, and it is common to find that the water is from 70 to 100 feet below the surface. The cultivators are not as a rule sufficiently well-to-do to undertake the expenditure necessary to sink such wells, and risk the failure of finding water. Since the introduction of the regular settlement, the Darbár has done much to encourage the sinking of wells by the grant of advances on easy terms.

In this tract, however, are found the only considerable areas protected by irrigation. The natural difficulties to be overcome are great, as the lie of the land makes projects costly and difficult to execute. The lines of irrigation have to cross the drainage of the country, and it is not easy to secure the channels against damage from the *kandis* when in flood. Owing to this difficulty, the more ambitious projects of former days—the Kashmír canal taking off from the Rávi above the

[See the Province of Jammu — Analysis]

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Mádhopur weir, the Shábi Nahr taking off from the left bank of the Chenáb opposite Akhnúr, and the Katobandi or Dalpat Nahr taking off from the Chenáb on the right bank—failed to render permanent help to the country. Something has recently been done to remedy the apathy displayed in the past. Two old irrigation works taking off from the Tawi in the Jammu *tahsil*—the Jogi Darwáza canal irrigating the land immediately below Jammu city, and the Satwari canal irrigating the villages round Satwari cantonment—have been realigned and put in order; and the Dalpat canal, taking off from the right bank of the Chenáb and irrigating a large portion of the Akhnúr *tahsil* lying immediately north of the Bhajwath Andar, has been reconstructed.

Under agreement with the Government of the Punjab the right of the State to take water from the Rávi, above the Mádhopur weir, for the irrigation of spring crops in the Kathua *tahsil* has been surrendered in consideration of an annual payment of Rs. 5,000. The restoration of the old Kashmír canal, which takes off above the weir, is thus not financially attractive. Probably the low-lying portion of the Mirpur *tahsil*, known as the Khari Iláka, could be irrigated from the Jhelum; but this source of irrigation has not been tapped.

Hindrances to cultivation.

There are many drawbacks to agriculture. The administration in the past was bad and shortsighted. There are practically no roads, and in the *kandi* tract even drinking-water is obtained with difficulty. Much damage is done by *nilgai*, hog, and monkeys, the first-named animal, though an antelope, being regarded as sacred like the cow. Cattle turned loose, either as likely to die and of no further use, or devoted to the deity, have become quite wild and do much damage to crops.

Intermediate land.

Above the first limestone range lies a country of wide valleys and high hills, consisting of Basoli, Rámnagar, Udhampur, Nacshera, and part of Riási. This has a more temperate climate than the tract just described. The supply of water by perennial streams is constant, but the stream beds are deep and irrigation is not easily effected. Being nearer the Himálayan range, rainfall is usually heavy and fairly constant, so that the people do not trouble themselves much about irrigation, except where this can be contrived at little expense. The crops are much the same as in the plains, but *kájra* gives way to maize, and sugar-cane and turmeric disappear. The seasons are shorter. The areas of *pahári* land, where the limestone bed penetrates or approaches the surface of the soil, are con-

Kr 132 133 311 Kr (164)

siderable. Communications are backward and prices generally rule low. Trade is carried on by Telis, who keep droves of pack-bullocks or ponies. Grazing is good and the tract is frequented by Gūjars, goatherds, and shepherds. A considerable export of *ghi* takes place. Wild hog and monkeys do damage, but no antelope are found. Autumnal fevers are very rare.

Uplands.

The higher uplands, including Bhadrāwar, Kishtwār, Rāmbān, part of Riāsi, and Rāmpur Rājaori, have a really cold climate, and in the winter snow falls. The cultivators are a different class from those in the plains and lower hills, and Kashmīri settlers are found. Here the mango-tree gives place to the apple; and the pear, the Oriental plane (*chinār*), and the *deodār* are found. The climate approximates to that of the valley of Kashmīr, and cultivation is on much the same lines. The specialities are saffron in Kishtwār, and poppy in Dodār, Kishtwār, and Bhadrāwar. This tract is healthy, and only in the more shut-in valleys do fevers trouble the people. Irrigation is general and the rainfall heavy. Grazing lands are plentiful and Gūjars numerous. Early snowfall and cold winds from the mountains affect the crops in the parts adjoining the Himālayan range, and prevent these coming to maturity in certain years. Bears, hog, and monkeys do some damage.

Kr [241] Kr (164) Kr [312]

Kashmīr proper.

Owing to its system of rivers, Kashmīr proper possesses a large area of alluvial soil, which may be divided into two classes: the new alluvial, found in the bays and deltas of the mountain rivers; and the old alluvial, lying above the banks of the Jhelum and extending as far as the *karewa*. The first is of great fertility, and every year is renewed and enriched by silt from the mountain streams. Up to the present, in spite of the lax system of forest conservancy, the silt of the mountain streams is rich and of dark colour; but the Sind river brings down an increasing amount of sandy deposit, which is partly due to the reckless felling of trees in its valley.

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Soils.

The Kashmīris, so far, have considered no crop worthy of attention save rice; by irrigation and manuring an artificial mould has been obtained for the rice-fields, and it is rare to hear anything said about the original soil. But they recognize four classes which require peculiar treatment when under rice-cultivation. These are known as *grūtī*, *bakil*, *ukil*, and *dasmulad*. *Grūtī* soil contains a large proportion of clay. It holds water, and in years of scanty rainfall is the safest land for rice. But if the rains be heavy, the soil cakes and the outturn of rice is poor. *Bakil* is a rich loam of great natural

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[Le north of Jammu -- Analyst]

State school badly housed, and a dispensary in a building wholly unsuited to the purpose. The town has a neglected appearance. The streets are badly laid, dirty, and undrained, and there are no attempts at conservancy. Trade is brisk. It is mostly in the hands of Mahājans and Khattrīs. The chief articles of export to British India are grain, *ghī* from the hills and Pūnch, and minor forest products from Kotli, Pūnch, and Rājauri; the chief imports are salt, cloth, tea, and sugar.

Pūnch.—Principal place in the *jāgīr* of the same name, Kashmīr State, situated in 33° 45′ N. and 74° 9′ E., at an elevation of 3,300 feet above sea-level. It lies on sloping ground above the right bank of the Tāwi. Population (1901), 8,215. The town is oblong in shape, and is unwalled, with narrow streets. There are about 750 houses, generally single-storeyed with flat mud roofs. The fort, in which the Rājā resides, stands on a mound about 300 yards from the south-west corner of the town. Pūnch is well supplied with water brought by channels from the neighbouring streams. The climate is hot in the summer, and the rice-fields in the neighbourhood are probably one of the causes of the prevalence of fever. During the five hot months it is the custom to migrate to the hills to the summer camping-ground known as Dhoks. There is a flourishing market and a large trade is done in grain and *ghī*, in spite of the fact that there are no roads in the *jāgīr* fit for cart traffic. A good six-foot road for pack transport has nearly been completed from the town to Uri on the Jhelum, and there is a project for a road to Rāwalpindi, with a suspension bridge over the Jhelum at Lachman Pātan. Other important tracks lead to Gulmarg and Tosh Maidān in Kashmīr, and to Jhelum. The ancient name was Parnotsa, and the place is often mentioned in the chronicles. The Kashmīris always speak of Pūnch as Prunts.

Situation. **Srīnagar.**—Capital of Kashmīr State, situated in 34° 5′ N. and 74° 50′ E., at an elevation of 5,250 feet above sea-level. The city lies along the banks of the Jhelum, with a length of about 3 miles and an average breadth of 1¼ miles on either side of the river. Originally houses were confined to the right bank of the river, and the site possesses many advantages, strategical and economic. It is not known when the extension on the left bank took place, but the royal residence was transferred to it in the reign of Ananta, 1028–63. Modern Srīnagar, on the right bank, occupies the same position as the ancient city of king Pravarasena II, who ruled at some period of the sixth century. Kalhana, in his famous chronicle, says that the

4: Durand G-3 (1888-93) 1900 AV1 Kashmir Av1

The changes
five years had wrought were great; the Kashmir troops on the frontier, instead of an ill-paid, undisciplined and ill-armed rabble, were an efficient body of troops regularly paid and well fed, who had given their proofs in severe fighting; good roads existed in the place of tracks torturing alike to baggage animals and laden men using them, and the rivers were bridged; extensive irrigation schemes, which were to prove of inestimable value to the people, were in hand; the authority of the Kashmir Government was firmly established on its frontier, and the influence of the British Government was paramount in the tract of country immediately south of the Hindu Kush.

I do not mean for a moment to infer that the work was complete, that perfection was attained, or that what credit there may have been was due to us on the frontier alone. The Kashmir troops, for instance, were but part of the great force of Imperial Service troops put at the disposal of the British Government in India by the Native Chiefs, but under us they had received their baptism of fire. It had been a great source of pride to me, who had followed the novel experiment with such cordial interest, to command Imperial Service troops at Nilt on the first occasion they had been in action, and to see them later in Chilas and elsewhere side by side with our own troops earning the admiration of all, and justifying their existence and the wisdom of the policy which had called them into being.

But some success we had achieved, and the object of the Government of India in establishing the

(c) The sepoys who attended at harvest to coerce the cultivators were removed. 651

(d) *Beşar* in its more objectionable form was abolished, and the cultivators who had abandoned their lands for fear of being impressed under *begar* were recalled and settled on their lands.

(e) Occupancy rights of *zamindars* in undisputed lands were confirmed.

(f) Careful enquiry was made into the status of privileged holders of land. The special rates were continued for the term of the first Settlement, but were made subject to re-assessment. Lands in excess of the sanctioned area were, however, assessed at the ordinary rates, even in the case of privileged holders.

(g) Waste lands were entered as *khalsa*, but preferential right for acquiring such lands was granted to *assamis*.

(h) Permanent but non-alienable hereditary occupancy rights were granted to those who accepted the first assessment so long as the revenue was paid.

(i) All land was carefully evaluated on the basis of the next produce, previous collections and the possibility of irrigation.

Mr. Lawrence's work was followed after him by a succession of Settlement Officers. By 1912, practically every Tehsil and district directly administered by the Government was settled either for the first time or in revision. The State share of revenue was fixed at 30 per cent. of the gross produce:

Elementary education was provided throughout the State. Two first grade colleges and two technical schools besides nearly 50 secondary schools and over 600 primary schools were established. Two *zenana* Hospitals at Srinagar and Jammu and over 60 dispensaries in the *mufassil* were opened. Municipalities were established to look after the sanitation and water supply of the cities. Several irrigation canals were constructed in both the provinces. The longest of these, the Ranbir Canal, now serves an area of over a lakh of acres. Tanks were constructed in the *kandi illaqa* of Jammu. Electric installations for lighting and supply of power to factories and workshops were erected in Kashmir and at Jammu. A Flood Spill Channel for diverting the waters of the Jhelum at the time of floods was constructed. Dredging 871 743 364 312 377 312

312 operations were conducted below the town of Baramulla for removal of silt and other barriers. Scientific departments
474 were established. The Co-operative movement was introduced.

648 The assistance rendered to the British Empire in
175 times of emergency and war may also be briefly mentioned. The brilliant services of the State troops in the Black Mountain, Agror Valley and Tirah expeditions met with grateful appreciation of the British Government. The contribution of the State during the Great War in man power was the highest (31,000) among all Indian States.
652 The cost of maintaining the troops sent over-seas came to Rs. 1,11,00,000. In addition, the State contributed three-fourths of a crore to the war loan. Battle Honours were won by the State forces in several fronts in East Africa and Palestine.

The Government have undertaken the execution of a scheme for improvement of livestock in the State on a systematic basis. A five-year scheme under which a large number of bulls of *Dhani* and *Sindhi* breeds are purchased and distributed among well-to-do *zamindars* in selected centres every year has also been sanctioned. Horse and mule breeding activities also have been started on a small scale, but a more comprehensive scheme is under consideration. Special interest has been taken in sheep-breeding, which is so important for the development of the wool industry in the State. Livestock shows are held at different places in the State every year, with a view to encouraging livestock improvement. More veterinary dispensaries are being opened every year. A laboratory has been established recently at Srinagar, where Goat Tissue vaccine is prepared for the treatment of animals. 232 656

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The Agriculture Department is doing useful work to improve agricultural conditions in the State. The activities of the Department which were at first confined to Kashmir Province only have been gradually extended to Jammu Province also. Agricultural and Horticultural experimental work and the demonstration of improved methods of cultivation of crops and fruit plants are important features of the Department's work. It also distributes improved seeds, grafted fruit plants, implements and manures, gives technical advice to orchardists and agriculturists and fights the San Jose Scale and other pests. Agricultural training is imparted to sons of *zamindars* at Government Farms. The Department has introduced high yielding varieties of wheat and corns including sugarcorns from the U. S. A., Canada and Russia, and several foreign vegetables and fruits. 654 242

The soils of Kashmir Valley are very fertile and irrigation is easy in areas removed from water. The improved seeds distributed by the Agriculture Department have found favour with the *zamindars*. Hand labour in Kashmir Province has been found to compete favourably with agricultural machinery. In Jammu Province, the use of new iron ploughs has been demonstrated and the *zamindars* have purchased such implements for their farms. [134] [312]

491 all the districts and important towns, except those in the frontier, with one another. Two bridges, one over
[731] the Chenab at Akhnoor and the other over the Tawi at Jammu, have been built at a cost of about Rs. 8 lakhs. The bridge at Akhnoor is believed to have the largest unsupported span (450 ft.) in India. The bridges over the Jhelum between Muzaffarabad and Domel and those over the Kishanganga between Muzaffarabad and Garhi Habibullah, which had been washed away during the flood of 1929 were replaced at a considerable cost. Following this flood, an elaborate scheme estimated to cost about Rs. 20 lakhs was sanctioned for the prevention of floods in future. The bunds of the river Jhelum have been raised at several places, and it is gratifying to note that there has been no major flood in Kashmir during the last 12 years. The moderately heavy flood of September 1941 passed on with no damage to the city. The Ujh River in Jammu Province is, as an experimental measure, being spanned by a reinforced concrete submersible bridge, the foundations of which are so designed as to safeguard against scour in heavy floods. If the experiment succeeds, similar bridges will be constructed on the large sandy streams.

655 Telegraph, telephone and wireless services have also been developed in recent years, and all important places have been linked up. There are two wireless Radio Stations, one at Jammu Cantonment and the other at Naushera. Proposals for establishment of aeronautical services between British India and the State are under
• 312 consideration. For irrigation purposes, the P. W. D.
657 maintains 10 canals, five in Jammu Province and five in Kashmir Province. Of the latter, one was completed about 13 years ago, while two have been completed recently.

Water supply in the cities of Srinagar and Jammu has been considerably improved and old pipes have been replaced at several places by new ones. In the remote parts of Jammu Province where there is scarcity of water, efforts have been made to supply drinking water by means of tanks, wells and pipes. Where spring water and other natural sources of supply are available, satisfactory arrangements for drinking water have been made. As has been shown elsewhere in this note, great efforts are being made by the Rural Development Depart-

ment for supply of drinking water to the *kandi illaqa* of Jammu Province, and a special allotment is made in the budget for the purpose every year. Tube wells have been constructed at several places, and water supply schemes for a number of localities are under consideration. 657 312

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Reference has already been made to one of the chief industries in the State, *viz.*, the Sericulture industry, which is a Government concern. The silk filature in Srinagar is the largest of its kind in the world. A special quality of raw silk has been produced in Kashmir, which can favourably compete with silk produced anywhere else. It is interesting to note that the rearing of cocoons for silk provides employment for thousands of homes in the villages, exclusive of the labour that finds employment in the factories themselves. Owing to the rise in the price of silk, sericulture has already made a good contribution to the revenue of the State. A scheme for a large expansion of the industry has been taken in hand. A five-year plan for the expansion of the factory at Jammu has already been sanctioned, and it is expected that at the end of five years, the labour employed in the sericulture operations in the factory premises and in cocoon rearing in the province as a whole will show an increase of 150 per cent. High class carpets are manufactured in Kashmir and exported to Europe and America. Owing to the war, however, this industry has suffered a set-back recently. The industry, as stated before, continues to receive a subsidy from the Government. 655 288

A Department of Industries was established in 1923 to develop and foster industries in the State. The chief among the older industries which have become established are a Match Factory, a Santonine Factory, a Tannery, a Pottery Factory and the Shri Karan Singh Woollen Mills. A Government Silk Weaving Factory has been established to produce high class silk fabrics of different kinds. It has recently been developed and expanded to four times its original size to give a further fillip to the silk weaving industry in the State. A Research and Commercial Sheep Breeding Farm with a research and commercial section has been established to develop the sheep breeding 647 655 288 232 654

132 The cause of high precipitation here is that the Monsoon which manages to reach these outer ranges of the Himalayas is deprived of its entire acqueous vapour by these mountains on the Punjab side of the Pir Panjal preventing its onward march and penetration to the Happy Valley which is very slightly, if at all, influenced by Monsoons.

132 161 (b) The second belt classed as the Poor Rainfall Division (20" to 40") comprises ten tehsils which have a density above 200 excepting entirely mountainous tehsil of Kishtwar (18) and partly mountainous Anantnag. It is in this belt that the highly populated tehsils of Ranbirsinghpura (527), and Srinagar (501) are located as also the fairly dense tehsils of Pulwama (334), Sri Pratapsinghpura (334), Baramulla (252), Kulgam (248), and Mirpur (285). For Kashmir which has a temperate climate a rainfall between 15" and 40" is considered sufficient for all kinds of cultivation as in such regions both evaporation and rainfall are generally less and consequently the population all over the Kashmir Valley is fairly dense.

(c) Next comes the belt of a very poor rainfall (below 15") with Kargil (density 7), Skardu (13), Gilgit (19) and Ladakh (1) all of which come last in regard to density; Ladakh tehsil having a rainfall of 3" exhibiting one man per square mile. Here the relation between rainfall and density is self-evident.

The above shows that rainfall has a great influence over the growth of population in all tehsils provided other conditions are equal.

161 312 241 (b) *Density and Irrigation.*—For the conduct of cultivation, water is the essential element and where Nature is not liberal enough in the distribution of a fair quantity of rainfall artificial means of irrigation whether by canals, tanks or wells make up for the deficiency. Instances are numerous where barren and dry tracts of land have been converted into flourishing fields through the improved irrigational facilities and have in consequence attracted large masses of human settlers. Lyallpur in the Punjab with an annual rainfall of 13 inches had in 1891 a density of 7 persons to a square mile but during the last 40 years it has grown so populous that its density at 1931 Census has now reached to 368 persons and is still growing.

The non-reliability of Census statistics of the State before 1911 makes it difficult to properly appraise the effects of irrigational works in influencing the growth of population, but even during the last twenty years the increase of density in Rarbirsinghpura tehsil from 428 to 527 and that of Jasmergarh from 241 to 281 and of Jammu from 313 to 387 is undoubtedly due in a large measure to the irrigational facilities afforded by the Ranbir canal and the Ujh and Basantpur canals in Kathua district.

133 161 (c) *Density and Configuration of the surface of land.*—Even where the supply of water by rain or irrigation is sufficint cultivation will not be full if the surface of the land is uneven. Throughout India, it is the level plains (of the Ganges, Punjab and other rivers) which are most thickly populated as in such places every inch of the land can be brought under the plough and water can be retained in the field to supply the moisture.

The table given under rainfall and density shows that in the State also it is the level plains at the foot of the hills in Jammu and the plains of the Kashmir Valley that support large populations while the hilly tehsils of Ramnagar, Riasi and Basohli etc., inspite of having highest rainfall are not thickly peopled on account of their hilly character.

132 161 (d) *Climate.*—The presence of masses of snow-covered mountains and the high altitude render the climate of part of Kashmir Valley very cold during the winter and the closing of the passes to the Frontier Illaqas during the

lower tracts. The Ranbir canal was thrown open in the Jammu Province but its effect on population were naturally to show themselves in the subsequent decades. Percentage increases of 5·3 and 11·3 for Jammu and Kashmir Provinces and 8·6 for the entire State for the decade is quite reasonable and reliable. 161 132

1911-1921.—The normal rainfall was generally better than in the previous decade. The condition of crops in the State during the decade was about the average on the whole with the exception of the extraordinarily dry year 1920 which caused serious distress in some tehsils of the Jammu Province. "The greatest suffering was occasioned in the tehsils of Kotli, Mirpur, Samba and Poonch Illaqas and in a slightly lesser degree in the tehsils of Kishtwar, Ramnagar, Ramban of the Udhampur district. Liberal Taccavi advances were made through the Co-operative Department in the district of Mirpur for purchase of grain and cattle, among whom the mortality was very heavy, owing to dearth of fodder and desertion of the population to neighbouring districts in search of livelihood. State efforts supplemented by private charity succeeded in partially easing the situation, but the adverse effects of this long drawn suffering had an important bearing on the movement of population in the affected tracts. The total amount of Revenue suspended during the decade was Rs. 196,987 of which Rs. 120,760 was suspended in the Jammu Province".

The suspensions in the Frontier Districts and Kashmir Province amounted to Rs. 5,623 and Rs. 70,604 respectively while remissions throughout the State aggregated to Rs. 21,000.

Irrigational Extensions.—The decade witnessed an increase in the number of canals by 2, in total mileage by 60 and in irrigated area by 15,652 acres which is a fairly satisfactory record of decennial improvement, greater share of improvement falling to the lot of Jammu Province as in Kashmir the natural water courses fed by snows require little further help by artificial means. In Jammu the Ranbir canal with 6 distributories was completed in 1912; the Basantpur canal in Kathua district was completed in 1917 and Ujh canal was started in 1919, while 8 distributories from Upper Jhelum canal were laid out in Mirpur in 1916. 161 312 ● [487]

Public Health.—Out of the total 88,294 deaths during the decade Influenza levied the heaviest toll (44,514 deaths) by causing 50 per cent. of the total mortality in 1918 and the disease held sway over both the provinces. Kashmir was free from Plague while Jammu had 9 visitations of this epidemic resulting in the total mortality of 9,134 persons in the decade. Cholera did its usual havoc in Kashmir and took away 18,064 lives—the 1919 attack being the most virulent. Small-Pox inflicted considerable mortality both in Jammu and Kashmir Provinces, the total number of deaths being 16,405. It is regretted that the absence of reliable vital statistics renders comparison with the past Census difficult. 161 164

Prices and Wages.—The exceptional feature of the decade was the abnormal rise in prices and wages during the War and the Post-War years as against the easy prices and steady conditions prevailing prior to 1914. The prices of food stuffs increased by 150 to 200 per cent. on account of the War and the wages of artisans and labourers were universally more than doubled. A mason who received a daily wage of -/8/- could not be had for less than Re. 1 or even Rs. 1/4/-. 458

Apprehending that the export of large quantities of food grains from the State to outside places where higher prices were obtainable will lead to intolerable famine conditions the State had to place an embargo on the export of wheat, maize and rice. It is, however, unfortunate that the number of deaths in the War is not given in the Report as the absence of the able bodied population from their homes for a period of five years and the deaths of 161 722

* [Errata: add "to" before "show"; cf. errata sheet, p. 329, category 116 -- Analyst]

132 Sailaba Circle, which told heavily on *Rabbi* and *Kharif* crops. The Muzaffarabad district had well distributed rainfall and good crops. Hailstorms did
[164] some damage in certain places. The year was immune from epidemics excepting an outbreak of Cholera claiming 133 victims. There was a disastrous fire at Muzaffarabad and with the exception of the Treasury all State office buildings the Tehsil, Wazarat and the Court were burnt down.

435 Prices of *Rabbi* crops remained generally higher. The Shali situation was under full control. The general condition of the people was good. The fresh land revenue assessment of the Uri tehsil was announced during the year and was received well by the zamindars.

731 With the exception of Mirpur and Bhadarwah tehsils the Jammu Province had timely and sufficient rains and good harvests. The visitation of locusts constituted a great nuisance throughout the province including the Jammu city where as if to give a demonstration of their strength they one day invaded even the Government offices and in a minute the walls, the doors electric posts and trees were literally blackened by their swarming numbers and their flying legions outside actually clouded the sun from view. The Government spent considerable amounts in the destruction of the pests by actually offering price per maund of the eggs destroyed by the zamindars. The Revenue officers had a busy time and the visits of high officers and the interest taken by the Minister went a great way in freeing the country from the locusts.

241 Inscrutable are the purposes of heaven as instead of anticipated scarcity and starvation fields yielded bumper crops and the over-flowing of grain markets lowered the prices so much that they touched the bottom and the agriculturists began to find it difficult to adjust themselves to the changed conditions.

164 General condition of the people was on the whole average the year being immune from diseases. The import of grain free of duty continued as also the measures against venereal diseases and abduction of women.

132 **Fasli year 1987-88 (upto end of 1987).**—Although the Fasli year is styled
435 1987-88 our account ends with the close of Bikram year 1987 when the final Census was taken.

Jammu district had well distributed rain attended with fair harvests; Mirpur had scarcity at *Rabbi* and excess at *Kharif* thus adversely affecting crops; Riasi and Udhampur districts had less rainfall than the previous year while Karnah had sufficient and timely rains. On the whole the rains were less favourable than of the past year.

The prices of grains showed a downward tendency due to the world slump; and fall in prices in the contiguous districts prevented the prices from rising here. Import of grain in Mirpur and Kathua continued free of customs duty. The general health of the people was satisfactory as there was no epidemic.

In the Kashmir Province the rains were scarce although better than the last year. There were no accidental calamities and no appreciable difference in prices. The general condition of the people continued good till end of 1987 as the political agitation started in the month of Har 1988 which does not fall within our decennium.

The condition of the zamindars is one of steady progress. The abnormal fall in prices in British India did not affect the Kashmir zamindars who obtained fixed prices from the Food Control Department which has proved a great boon both to the urban and rural population.

312 **18. Extension of Irrigation.**—Having discussed the character of the seasons, the condition of crops and the general economic condition of the people
½ [Errata: read "menace" for "nuisance"; cf. errata sheet, p. 329, category 116 -- Analyst]

6:India G-3 (1931)1933 AVI Kashmir AV1

for each year of the past decennium we now come to a detailed examination of some of the principal factors affecting growth of the agricultural population, chief among which is the irrigation which alone can enable our agricultural productions to meet the recurring requirements of growing population. The absence of connected accounts of the principal irrigation systems of the State in any of the previous Census Reports provides ample justification for the devotion of larger space to the subject in this Report as it is well nigh impossible to assess the improvement of our agricultural resources without a knowledge of the irrigational systems that form the basis for this development. 312

The history of irrigational works in the State may safely be devided into three definite periods, (*a*) period prior to year 1901, (*b*) 1901 to 1923, (*c*) 1923-1929. Prior to 1901 attempts were made in the reign of Muslim King Zain-ul-Abdin to construct irrigational works in the valley and even as far back as 5,000 years Raja Ram Dev is said to have constructed a 21 miles long canal from Ganeshpura to Martand Temple.

Besides the Rajpur canal drawn from the Chenab at a cost of several lacs in the reign of the late Maharaja Sir Ranbir Singh Sahib Bahadur which did not prove successful on account of mistake in levels there were some nine water-courses taken out direct from the Chenab and six from the Tawi stream all of which irrigated the Jammu district alone, while there existed *Zamindari* canals both in the Kashmir valley and other parts. The first irrigational work constructed by the State Public Works Department in the Jammu Province was the Jogi Gate canal 5½ miles long with a bed width of 4 feet and a discharge of 10 cusecs which cost Rs. 422,228 and besides irrigating some lands near about Jammu supplied water to the State gardens.

1901-1923.—It was in 1901 that expansion of irrigation on scientific lines was seriously commenced under the supervision of the Public Works Department and a regular irrigation division under a Divisional Engineer was opened in the Jammu Province while the irrigation in the Kashmir Province was looked after by the Divisional Engineer Kashmir Public Works in combination with the Roads and Buildings. During this period 1901-1923 the following canals were constructed :—

Kashmir Province ...	1.	Martand Canal.
	2.	Lal Kuhl „
Jammu Province ...	1.	Pratap „
	2.	Ranbir „
	3.	Basantpur „
	4.	Ujh Canal (upto R. D. 36,000).
	5.	Upper Jhelum Canal Distributaries.

Martand Canal.—It takes off from the Liddar river and has a total length of 34·25 miles (Main line 24·50 and Distributaries 9·75) the total area irrigable being 15,006 acres of which 3,398 were already irrigated by the old Shahi Kuhl. It was started in 1901 with a project estimate of Rs. 211,300 and is having a successful run since 1903 serving the two-fold object of irrigating the crops and supplying pure drinking water to the inhabitants of the Martand plateau.

Lal Kuhl.—The project at an estimated cost of Rs. 84,288 was completed in 1903 and was designed to irrigate 7,015 acres of which 1,816 acres already received irrigation from the old *Kuhl*. The total length is 21·7 miles and it serves for *Kharif* irrigation only.

The Pratap Canal.—Excavated originally in 1873 the canal was remodelled and extended in 1903-1904 at an estimated cost of Rs. 73,326.

312 Taking off from the right bank of the Chenab river the canal flows perennially over a total length of 24·15 miles commanding an area of 15,000 acres. It is more of a protective than productive irrigation work and the expectation of a good return has not been fully realized as the zamindars are not keen to utilise canal water in spite of the low *abiana* rates.

312 376 *Ranbir Canal.*—This is the largest and most important canal in the State and was started with a project estimate of Rs. 1,700,000 in 1903 and spread to 1908. Taking off from the left bank of the Chenab near Akhnur and following for the first 4½ miles in the line of the old Shahi canal it flows for 39 miles in the main channel and 212 miles in the distributaries (total 251 miles) and is capable of commanding an area of 108,000 acres. Besides serving as an irrigation channel for 16 miles, propelling the turbines of the Jammu Hydro-Electric installation which supply electricity for lighting the city of Jammu, running the Water Works purifying plant, driving the looms of the Sericulture Department and mills of the city, the canal has greatly ameliorated the condition of the rural population of the Jammu district and has proved a great productive work bringing a fair revenue to the State.

312 *Basantpur Canal.*—Commenced in 1914-15 with a project estimate of Rs. 290,000 and intended to irrigate 7,427 acres the irrigation from the canal has not been satisfactory as the discharge of 120 cusecs which could be taken into it under an agreement with the Punjab Government has proved very inadequate as the land being porous and stony absorbs a large percentage of this supply. The canal takes off from the right bank of the Ravi about 3 miles above the Madhopur Head Works (Kathua) and has a total length of 13 miles. It has no *Rabbi* irrigation since under the agreement water can be drawn into it from 1st of April to 30th September only.

Ujh Canal.—Started in 1915 with a sanctioned cost of Rs. 280,000 the canal was completed only in 1923 *i. e.* during the current decade with a total length of 46 miles. It takes from the river Ujh and serves an area of 1,480 acres of land in the Jasmergarh tehsil of the Kathua district.

Upper Jhelum Canal Distributaries.—These distributaries 8 in number, 15 miles in length and constructed at a cost of a lac of rupees take out from the Upper Jhelum Canal in the area through which the canal passes in the State territory. The total area of Mirpur and Bhimber tehsils expected to be irrigated was 7,600 acres but so far very little irrigation has been received as the seepage from the Upper Jhelum Canal has done considerable damage to this Illaqa.

312 651 *Revenue Kuhls.*—Besides the above irrigation works the following four *Kuhls* have been constructed to help the irrigaton in the Gilgit Agency and Ladakh Wazarat the income whereof is appropriated by the Revenue Department.

(*i*) *Kurbathang Kuhl* in Kargil tehsil.

(*ii*) *Safed Pari Kuhl.*—A vast tract of uncultivated land near Safed Pari and Chakarkot maidan between miles 18 and 23 of the Bandipur-Gilgit road was thirsting for irrigational facilities in spite of its proximity to the deep Gilgit river. Scarcity of fodder and grain in Bunji and Gilgit and high temperature of the tract invited the attention of officers who in 1912 attempted the construction of a small *Kuhl* through a company of Sappers and Miners but the work was left incomplete. In 1913 construction of *Kuhl* from Sai Nallah on the other side of the hill range about 4 miles above Jagrote village along with its Chakarot branch was started at an estimate of Rs. 30,145 and successfully completed in two years. The *Kuhl*, apart from irrigating 2,000 acres has proved a boon for travelling public by considerably modifying the climate of the district and providing homes for numerous Yagistanis and other people.

(*iii*) *Naupur Kuhl.*—Owing to insufficiency of water in the old Naupur *Kuhl* a new *Kuhl* taking off from Kargil Nallah was constructed in 1924-25 at an outlay of Rs. 21,174 to irrigate lands of Naupur, Naiku and Burmas villages as also to compensate the zamindars of Burmas village who were promised water in exchange for the Burmas Spring water diverted for Gilgit water supply. 312 651

(*iv*) *Harban Kuhl.*—The construction of this *Kuhl* in Harmosh Illaqa in Gilgit district which was completed only last year is expected to ameliorate considerably the condition of the Illaqa.

1923-29.—This period which entirely falls within our decade is unique in the history of irrigational development in the State as in his capacity of the Senior and Foreign Member the present Ruler of the State drew up a scheme for the breaking up of the Public Works Department into three separate departments namely (1) Roads and Buildings, (2) Irrigation and (3) Electricity, each under the control of a separate wholetime Chief Engineer who will be able to devote his whole-hearted attention and energies to the development of his particular branch. Since this scheme marks an era in the inauguration of a vigorous policy of development it is only fair to quote briefly the highly beneficient intentions of the Ruler which show the depth of patriotic feelings and irresistible love for the welfare of the people : – 312 653

"Under the present system one State Engineer controls Roads and Buildings, Irrigation and Electricity. In all three branches the State is in a very backward and undeveloped condition and our only hope of progress appears to be in separating these three branches and placing each under the control of a competent and energetic officer who would thus be able to devote his whole time and attention to the development of his particular branch.

Taking each branch separately we find that our communications are exceedingly bad. We have in Kashmir roads leading into the valley, one from Rawalpindi, being long established, is in good order. The road from Jammu is quite unfinished and requires a very great deal of attention. This road being an all-State route, should be developed as rapidly as possible and made into the main trade and passenger artery of the State. When we leave these two main roads we find that outside the actual valley of Kashmir, hardly a road worthy of the name exists in the State. I have lately travelled from Jammu via Batote and Bhadarwah and Kishtwar and over the Simthan Pass into the valley of Kashmir and I can personally certify to the dire necessity of developing our internal communications. Apart from the needs of our people roads are necessary for the development of our great forest properties.

Turning to irrigation, the production of more and more food is necessary because our population continues to increase as a matter of course. All our culturable areas excluded from forests have been brought under the plough, and the production of more food cannot be hoped for from cultivated areas dependent upon rainfall alone. Our only hope lies in extension of irrigation whereby the produce of already cultivated fields would be greatly increased. We are the happy possessors of abundant rivers and streams and it is most discreditable that we have not taken full advantage of this bounty of nature.

In consequence I propose that in future instead of having one State Engineer to control these three branches of our Public Works, we should employ three men".

This resulted in the constitution of the Irrigation Department having two Divisions in Jammu and one in Kashmir showing the following progress during the decade 1921-30.

In Kashmir besides survey work for various irrigation schemes the construction of Zainagir Canal started in 1980/1923 at an estimated cost of rupees eleven lacs has been brought to completion and opened during the year 1987-88/1931. The canal having a total length of 43·6 miles (Main 21·1 and Distributary 22·7) is expected to irrigate an area of 14,200 acres annually out of total commanded area of 18,000. It takes off from Madmati stream. 312

312 In Jammu the extension of the Ujh Canal was started at an estimated cost of Rs. 695,422 in the year 1924 and major portion of the work is nearly finished. Moreover extension to Distributary No. 9 of the Ranbir Canal has also been carried out at a cost of Rs. 140,032.

During the decade under report the length of the canals has increased from 325·21 miles to 460·78 miles giving a net increase of 135·49 miles in length and increase of 46,965 acres in area which no doubt is a record of good progress. Out of a total expenditure of Rs. 11,813,000 incurred on irrigation works from 1902-03 upto end of 1928-29 Rs. 3,496,361 were spent during the last decade. The expenditure on irrigation works from 1921 to 1929 amounts to Rs. 3,486,361 while the receipts come to Rs. 2,643,964. The position may be summed up in the words of the Chief Engineer, Public Works Department as follows:—

"Looking at either from the point of view of the revenue realised by the State or the prosperity of the Illaqas in which the various canals pass there can be no doubt that they have more than amply fulfilled the expectations with which they were started. Vast areas in the Jammu and Kashmir Provinces have now been made fertile. Places which at one time appeared wilderness and uninhabitable and suffered even from want of drinking water are now full of green fields and well grown fruit gardens. The price of the land has considerably increased and the inhabitants are now in a comparatively prosperous condition".

133 164 **19. State of Public Health.**—In a vast country like Jammu and Kashmir State with no homogeniety of climate and seasonal conditions, the factors governing public health are so varied that it is difficult to form a correct estimate for the entire country as to the propitiousness or otherwise of the individual years much less of a decade. The big mountain barriers divide the territory into distinct water tight compartments each possessing separate traits of climate with the result that while the Jammu Province might be passing through a severe epidemic of Plague the province of Kashmir is found to be immune from the touch of the epidemic, and on the other hand prevalence of Cholera in Kashmir in particular years has little effect upon Jammu, not to say of the far-flung Frontier regions.

164 744 This view derives ample support from the survey of the various epidemics during the last decade. During the period of ten years 1921-30 there have been 9 annual visitations of Plague in the Jammu Province more especially in the Jammu district while Kashmir Province enjoyed complete immunity for all these years with the exception of 1926 when in the month of November Plague broke out in the Awantipura and Kulgam tehsils claiming 38 victims. As regards Kashmir Cholera has visited the province in 1924, 25, 27, 29 and 30 but with the exception of 1929 when 70 persons died of Cholera in Basohli tehsil the Jammu Province has been almost free from the disease. The total mortality from the infectious diseases is given in the following table:—

Cholera	... 19,857
Small-pox	... 15,546
Plague	... 5,251

Plague.— The total deaths from plague in the Jammu Province came to 5,222 as against 9,134 of the last decade which shows that although the visitations of the epidemic have been frequent and regular the loss of life has been reduced by almost 50 per cent. which is due to the prompt and effective measures taken to combat the disease by the Health and Medical Departments in the shape of systematic trapping of rats, disinfection of houses and anti-plague inoculations. With the exception of the epidemic of 1924 which levied a toll of 2,242 lives the course of the disease has been sporadic and unperceived.

The only exceptional turn taken by the disease was to make its appearance in the Kashmir Province in 1926 when the Kulgam and Awantipura tehsils

D 161 The greatest increase in population has taken place in Kuh which registers a percentage of 22·7 increase over the last Census while Chilas on the other hand shows +3·03 per cent. increase. The case of Nagar is no doubt alarming as instead of an increase it shows a decrease of 516 persons or a variation of B 161 −3·63 per cent. In this blessed decennium therefore Nagar forms the one single exception of decrease of population in the State in contrast with all other tehsils which register all-round increases. The causes of variation have been explained by the Political Agent Gilgit in the following words :—

"All districts show an increase except Nagar which shows a decrease of 524. The increases are doubtlessly due to the healthy normal life of the past 10 years, peace and security having more than out balanced small epidemics of Influenza in 1929-1930. Nagar, however, is undoubtedly nearing the saturation point as regards population—space land now being very scarce. Moreover, the Influenza epidemic in 1929 took large toll as did an epidemic of Typhus in 1930."

K 161 **52. General.**—Having attempted to offer a detailed analysis of the growth of population in the different Administrative Divisions such as Provinces, Districts and Tehsils, and having also made detailed survey of the flourishing conditions of the decade responsible for producing such happy demographic results occasion is now ripe for us to take stock of our position and to bring the scattered data and arguments to a focus to enable proper penetration into the more intricate problems of population about which a promise was held out by us in the opening portion of this discussion.

The causes of the highly favourable growth of population which is almost on par with the All India increase (The decennial increase in the State being 9·8 per cent. against 10·6 per cent. of India) have already been studied in detail in the paragraphs dealing with the "Conditions of decade" but it would be advantageous to briefly review them here so that the reader may have an opportunity to refresh his memory and be better equipped to appreciate the theme. K [132] Sufficient, timely and well distributed rainfall (except for certain bad years of scarcity in the Mirpur and to some extent in Kathua district) bringing good harvests in its train effected a considerable improvement in the economic condition of the agriculturist and highly favoured the growth of population during the last ten years.

K [164] Exceptionally favourable conditions of public health in the decade which was characterised by the absence of severe epidemic of Influenza which during 1911-1921 inflicted greater mortality here than the Great World War. Although Plague in the Jammu Province, Cholera in Kashmir, mild Influenza and Typhus in the Frontiers did make occasional attacks but the prompt, vigorous and effective measures taken by the Medical authorities coupled with the co-operation of the people (who on account of the spread of education and accumulation of experience readily avail of the medical help and do a good deal to combat the disease) did not allow the epidemics to levy a high toll on the precious human life which consequently had a favourable occasion for rapid multiplication. K [312] Extension of irrigational facilities causing a considerable enlargement in the irrigated and irrigable area was further responsible for expansion of agricultural production. Improvement of communications especially the opening of the Banihal Cart Road, Jammu, Samba, Kathua, Akhnur and various other minor roads has imparted a good stimulus to trade resulting in increased prosperity of the people. K [471] Again the development of some of the industries and immediate possibilities of the growth of a larger number in the near future has besides providing employment to some people opened an era of hope for the youth of the country, who in the progressive permeation of the industrial atmosphere around him sees a magnificent vision of effective industrialisation in which lies the solution of the unemployment problem. Above all the prevalence of peaceful and orderly conditions ensuring security of life and property was highly conducive to the growth of population during the decade 1921-1930. In this connection it may be noted that the communal clashes and the political agitation in the State which created so much stir throughout the country commenced in July 1931 *i. e.*, after the close of the decade 1921-1930 which alone is under review in this report.

3a Lawrence G-8 (1889-1893) 1895 AV4 Kashmir AV4
Kashmir AV1

at about 191° or 192°, or about 20° below the normal boiling-point at the sea-level.

'The mean annual temperature of Leh is 40°, that of the coldest months (January and February) only 18° and 19°; but it rises rapidly from February to July, in which month it reaches 62°, with a mean diurnal maximum of 80°, both in that month and August, and an average difference of 29° or 30° between the early morning and afternoon. The mean highest temperature of the year is 90°, varying between 84° and 93° in the last twelve years. On the other hand, in the winter the minimum thermometer falls occasionally below 0° Fahrenheit, and in 1878 reached as low as 17° below zero. The extreme range of recorded temperature is, therefore, not less than 110°.

'The air is as dry as at Quetta, and rather more uniformly so. In the driest month (June) the mean humidity is but 37 per cent. of saturation, and in the dampest months (January and February) only 61 per cent. But the skies are more cloudy than these circumstances would lead one to expect, and in no month does the mean cloud-proportion fall much below four-tenths of the expanse. The amounts of rain and snow are, however, insignificant. The average rain (and snow) fall is only 2·7 inches in the year, and twice that amount is the greatest yet recorded in any one year (1879), while in one year (1876) it was less than half an inch. It snows most frequently in January and February, but the falls are very light in the valley and soon disappear. Rain is most frequent in July and August, but even then it occurs, on an average, only on one day in ten, between one and two-tenths of an inch being the average fall of each rainy day. Agriculture is, therefore, almost entirely dependent on irrigation.

'The winds are generally light, and depend on the local direction of the valleys. At Leh, which stands at the entrance of the valley leading to the Khardong Pass, the most common directions are between south and west in the daytime and summer, and from north-east in the night, especially in the later months of the year.

'In January and February the air is generally calm, and April and May are the most windy months of the year.

'Srinagar is situated in the Kashmir Valley, at an elevation of about 5,200 feet. The valley is enclosed on all sides by mountains rising to an elevation of 15,000 feet and upwards, and is hence completely shut in, so that it does not share in the general air circulation of the Panjáb or Western Himalayan area. The winds are, in fact, chiefly from south and south-east, and appear to be mainly determined by the general direction of the river valley. The observatory was established in 1891, and hence the observations are too few in number to give more than the broad features of the climate of the Kashmir Valley. The mean annual temperature is probably 55°. The

[Notes by Eliot. See category 116, p.27 for identification of Eliot -- Analyst]

Ls Lawrence G-8 (1889-1895) 1895 AV4 Kashmiri AV4
Kashmir AV1

Ki 631
Kr 631
[312]

It should be explained that the Gurais valley, which, previous to Settlement, formed part of the Gilgit province, has been surveyed and assessed and is now part of the new Sopur Tahsil. The changes in the administrative divisions made by me were based on two principles, one, that so far as possible each irrigation system of the country should be under the jurisdiction of one tahsildar, the other that the river Jhelum should be utilized as the boundary of the tahsil.

The local divisions of Kashmír have varied considerably. In old days the country was divided into two parts, Maráj, the south, and Kámráj, the north. Tradition says that two brothers, Marhan and Kaman, fought for the crown, and that all the country below Srinagar fell to Kaman and was known as Kamanráj, and that all above became the territory of Marhan and was known as Marhanráj. These local divisions are still recognized by the people, and the *patsis* of Maráj differs from that of Kámráj, and both differ from that of Yámráj which is the old name for Srinagar. In these divisions were thirty-four subdivisions, still recognized by the people, and though the State may for administrative purposes make changes in boundaries and in designation, the old names will linger on, and the people of Ranbir Singhpura Tahsil will style themselves residents of Shahabad and Brang for many years to come. In 1871 we find that the country was divided into five wazárats or districts, Srinagar, Patan, Anantnág, Kámráj, and Shupiyon. These were again subdivided into thirty-seven tahsils. In 1887, that is just before the Settlement commenced, there were four districts, Srinagar, Haripur or Shupiyon, Kámráj, and Anantnág. These districts contained twenty-eight tahsils and were said to contain 2,487 villages.

The Kashmír valley, with its three wazárats and its eleven tahsils, is under the executive charge of the Hákim-i-Ála, or Governor of Kashmír. This officer is also the executive head of the districts of Gilgit, Astor and Muzaffarabad. Ladakh and Skardu districts are under the charge of the Hákim-i-Ala or Governor of Jammu. As before explained, the statistics contained in this chapter refer to the Valley of Kashmír as comprised in the three districts of Khás, Anantnág, and Sopur, with eleven tahsils, and *do not include* Muzaffarabad, Gilgit, or Astor.

Ki 161

In 1835 it was stated that the population of the valley did not exceed 200,000 persons, 'to which number it had been in twenty years reduced from 800,000 by oppression and the awful dispensation of earthquake, pestilence, and famine.' Population.

Ki 162

In 1868 a census was taken of the population of Srinagar, but its accuracy was doubted. The census gave a population of 112,715 persons, of whom 24,945 were Hindus and 87,770 Muhammadans. The number of houses was stated to be 20,504.